

TEXT

MAUPIN 09/835,371

=> d ibib abs L43

L43 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:780897 HCAPLUS
DOCUMENT NUMBER: 135:331677
TITLE: Methods for preparing phosphorylated peptide nucleic acids carrying one or more marker, crosslinking, intracellular uptake, or binding affinity groups
INVENTOR(S): Uhlmann, Eugen; Breipohl, Gerhard; Will, David William
PATENT ASSIGNEE(S): Aventis Pharma Deutschland G.m.b.H., Germany
SOURCE: PCT Int. Appl., 93 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001079216	A2	20011025	WO 2001-EP4030	20010407
WO 2001079216	A3	20020228		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
DE 10019135	A1	20011031	DE 2000-10019135	20000418
AU 2001054795	A5	20011030	AU 2001-54795	20010407
PRIORITY APPLN. INFO.:			DE 2000-10019135 A	20000418
			WO 2001-EP4030	W 20010407

OTHER SOURCE(S): MARPAT 135:331677
AB The invention relates to PNA derivs. that carry one or more phosphoryl groups at the C terminus or at the C and N terminus of the PNA backbone, said phosphoryl groups optionally carrying one or more marker groups, or groups for crosslinking, or groups that promote the intracellular uptake, or groups that improve the binding affinity of the PNA deriv. to nucleic acids. The invention further relates to a method for producing the above PNA derivs. and to the use thereof as a medicament or diagnostic agent. Thus, title compd. $\text{CH}_3(\text{CH}_2)15\text{OP(O)(OH)}-\text{T(oeg)}[\text{ATTCCGTCA}] (\text{CH}_2)6\text{NHP(O)(OH)}\text{O}-\text{CH}_2\text{CH}(\text{CH}_2\text{OH})(\text{CH}_2)4\text{NHC(S)NH-fluorescein}$ (I) [T(oeg)] = $\text{O}(\text{CH}_2)2\text{N}(\text{C}(\text{O})\text{CH}_2-\text{Base})\text{CH}_2\text{C}(\text{O})-$; remainder of chain = normal peptide nucleic acid backbone] was prep'd. using solid-phase peptide synthesis techniques. Hybridization tests of I with complementary DNA and RNA showed better complexation with DNA than with RNA, though both were stronger than with PNA Ac-NH-TATTCCGTCA-(CH₂)₆NH₂ ref. In vitro cell proliferation studies using I and human pre-B leukemia cells showed stronger inhibition than a known phosphorothioate oligonucleotide (no data).

=> D IND L43

L43 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2002 ACS
IC ICM C07H

CC 34-3 (Amino Acids, Peptides, and Proteins)
 Section cross-reference(s): 6, 33, 63

ST PNA deriv **prep**n antiviral antimicrobial antitumor diagnostic hybridization

IT Diagnosis
 (agents; **prep**n. of PNA derivs. as therapeutic or diagnostic agents)

IT Solid phase synthesis
 (peptide; **prep**n. of PNA derivs. as therapeutic or diagnostic agents)

IT Antimicrobial agents
 Antitumor agents
 Antiviral agents
 Biosensors
 Nucleic acid hybridization
 (**prep**n. of PNA derivs. as therapeutic or diagnostic agents)

IT Peptide nucleic acids
 RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (**prep**n. of PNA derivs. as therapeutic or diagnostic agents)

IT 368505-39-9P
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (**prep**n. of PNA derivs. as therapeutic or diagnostic agents)

IT 367985-20-4P 367985-21-5P 367985-22-6P 367985-23-7P
 RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (**prep**n. of PNA derivs. as therapeutic or diagnostic agents)

IT 367985-17-9P 367985-19-1P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (**prep**n. of PNA derivs. as therapeutic or diagnostic agents)

IT 367985-18-0P 368505-37-7P 368505-38-8P 368505-40-2P
 RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (**prep**n. of PNA derivs. as therapeutic or diagnostic agents)

IT 110616-00-7 116364-61-5 147178-75-4 159845-57-5 169025-57-4,
 GenBank AR029142 181988-02-3 181988-09-0 186070-79-1, GenBank A42375
 186071-78-3 186108-31-6, 3: PN: WO0004034 SEQID: 3 unclaimed DNA
 186123-93-3, GenBank A44395 186162-52-7 186162-55-0, GenBank A42368
 189356-60-3 195184-07-7, GenBank A42342 195184-11-3, GenBank A42347
 195184-12-4 195184-14-6, GenBank A42351 195184-15-7, GenBank A42352
 195184-16-8, GenBank A44386 195184-17-9, GenBank A42354 195184-18-0,
 GenBank A42355 195184-19-1, GenBank A42356 195184-20-4, GenBank A42357
 195184-21-5, GenBank A42358 195184-22-6, GenBank A42359 195184-23-7,
 GenBank A42361 195184-24-8, GenBank A42362 195184-25-9, GenBank A42363
 195184-26-0, GenBank A47186 195184-27-1 195184-28-2, GenBank A47179
 197831-18-8 246223-25-6 257601-47-1, GenBank AX283184 325605-36-5,
 GenBank AX283169 325605-37-6, GenBank AX283174 325605-38-7
 325605-39-8 325605-40-1 325605-41-2 325605-42-3 325605-43-4
 325605-44-5 325605-45-6 325605-46-7 325605-47-8 325605-48-9
 325605-49-0 325605-50-3 325605-51-4 325605-52-5
 RL: PRP (Properties)
 (unclaimed nucleotide sequence; methods for **prep**g.
phosphorylated peptide nucleic acids carrying one or more marker, crosslinking, intracellular uptake, or binding affinity groups)

MAUPIN 09/835,371

43

=> D HITSTR L&S

L45 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2002 ACS

IT 368505-39-9P .

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(*prepn.* of PNA derivs. as therapeutic or diagnostic agents)

RN 368505-39-9 HCAPLUS

CN Peptide nucleic acid, ([5'-deamino-5'-[(hexadecyloxy)hydroxyphosphinyl]oxy]T-A-T-T-C-C-G-T-C-A-T)-[17-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-8-hydroxy-11-(hydroxymethyl)-8-oxido-17-thioxo-7,9-dioxa-16-aza-8-phosphaheptadec-1-yl]NH (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 367985-20-4P 367985-21-5P 367985-22-6P

367985-23-7P

RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(*prepn.* of PNA derivs. as therapeutic or diagnostic agents)

RN 367985-20-4 HCAPLUS

CN DNA, d(A-T-G-A-C-G-G-A-A-T-A), complex with peptide nucleic acid ([5'-deamino-5'-(phosphonoxy)]T-A-T-T-C-C-G-T-C-A-T)-[17-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-8-hydroxy-11-(hydroxymethyl)-8-oxido-17-thioxo-7,9-dioxa-16-aza-8-phosphaheptadec-1-yl]NH (1:1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 367985-21-5 HCAPLUS

CN Peptide nucleic acid, ([5'-deamino-5'-(phosphonoxy)]T-A-T-T-C-C-G-T-C-A-T)-[17-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-8-hydroxy-11-(hydroxymethyl)-8-oxido-17-thioxo-7,9-dioxa-16-aza-8-phosphaheptadec-1-yl]NH, complex with RNA (A-U-G-A-C-G-G-A-A-U-A) (1:1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 367985-22-6 HCAPLUS

CN DNA, d(A-T-G-A-C-G-G-A-A-T-A), complex with peptide nucleic acid ([5'-deamino-5'-[(hexadecyloxy)hydroxyphosphinyl]oxy]T-A-T-T-C-C-G-T-C-A-T)-[17-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-8-hydroxy-11-(hydroxymethyl)-8-oxido-17-thioxo-7,9-dioxa-16-aza-8-phosphaheptadec-1-yl]NH (1:1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 367985-23-7 HCAPLUS

CN Peptide nucleic acid, ([5'-deamino-5'-[(hexadecyloxy)hydroxyphosphinyl]oxy]T-A-T-T-C-C-G-T-C-A-T)-[17-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthen]-5-yl)amino]-8-hydroxy-11-(hydroxymethyl)-8-oxido-17-thioxo-7,9-dioxa-16-aza-8-phosphaheptadec-1-yl]NH, complex with RNA (A-U-G-A-C-G-G-A-A-U-A) (1:1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 367985-17-9P 367985-19-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(*prepn.* of PNA derivs. as therapeutic or diagnostic agents)

RN 367985-17-9 HCAPLUS

CN Peptide nucleic acid, (acetyl-T-A-T-T-C-C-G-T-C-A-T)-[6-

(phosphonooxy)hexyl]NH (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 367985-19-1 HCPLUS

CN Peptide nucleic acid, ([5'-deamino-5'-(phosphonooxy)]T-A-T-T-C-C-G-T-C-A-T)-[17-[(3',6'-dihydroxy-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthene]-5-yl)amino]-8-hydroxy-11-(hydroxymethyl)-8-oxido-17-thioxo-7,9-dioxa-16-aza-8-phosphahexadec-1-yl]NH (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 367985-18-0P 368505-37-7P 368505-38-8P

368505-40-2P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of PNA derivs. as therapeutic or diagnostic agents)

RN 367985-18-0 HCPLUS

CN Peptide nucleic acid, ([5'-[[[(6-aminohexyl)oxy]hydroxyphosphinyl]oxy]-5'-deamino]T-A-T-T-C-C-G-T-C-A-T)-[6-(phosphonooxy)hexyl]NH (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 368505-37-7 HCPLUS

CN Peptide nucleic acid, (acetyl-T-A-T-T-C-C-G-T-C-A-[3'-de(carboxymethyl)-3'-[2-(phosphonooxy)ethyl]]T) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 368505-38-8 HCPLUS

CN Peptide nucleic acid, ([5'-deamino-5'-[[[6-[[5-[(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-d]imidazol-4-yl]-1-oxopentyl]amino]hexyl]oxy]hydroxyphosphinyl]oxy]T-A-T-T-C-C-G-T-C-A-T)-[2-(phosphonooxy)ethyl]NH (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 368505-40-2 HCPLUS

CN Peptide nucleic acid, ([5'-[(28-amino-1,21-dihydroxy-1,21-dioxido-2,5,8,11,14,17,20,22-octaoxa-1,21-diphosphaoctacos-1-yl)oxy]-5'-deamino]T-A-T-T-C-C-G-T-C-A-T)-[6-(phosphonooxy)hexyl]NH, complex with RNA (A-U-G-A-C-G-G-A-A-U-A) (1:1) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 110616-00-7 116364-61-5 147178-75-4

159845-57-5 169025-57-4, GenBank AR029142

181988-02-3 181988-09-0 186070-79-1, GenBank

A42375 186071-78-3 186108-31-6, 3: PN: WO0004034

SEQID: 3 unclaimed DNA 186123-93-3, GenBank A44395

186162-52-7 186162-55-0, GenBank A42368

189356-60-3 195184-07-7, GenBank A42342

195184-11-3, GenBank A42347 195184-12-4

195184-14-6, GenBank A42351 195184-15-7, GenBank A42352

195184-16-8, GenBank A44386 195184-17-9, GenBank A42354

195184-18-0, GenBank A42355 195184-19-1, GenBank A42356

195184-20-4, GenBank A42357 195184-21-5, GenBank A42358

195184-22-6, GenBank A42359 195184-23-7, GenBank A42361

195184-24-8, GenBank A42362 195184-25-9, GenBank A42363

195184-26-0, GenBank A47186 195184-27-1

195184-28-2, GenBank A47179 197831-18-8

246223-25-6 257601-47-1, GenBank AX283184

325605-36-5, GenBank AX283169 325605-37-6, GenBank

AX283174 325605-38-7 325605-39-8 325605-40-1

325605-41-2 325605-42-3 325605-43-4

325605-44-5 325605-45-6 325605-46-7

325605-47-8 325605-48-9 325605-49-0

325605-50-3 325605-51-4 325605-52-5

RL: PRP (Properties)

(unclaimed nucleotide sequence; methods for prep).

phosphorylated peptide nucleic acids carrying one or more marker, crosslinking, intracellular uptake, or binding affinity groups)

RN 110616-00-7 HCPLUS

CN Adenosine, thymidylyl-(5'.fwdarw.3')-2'-deoxyadenylyl-(5'.fwdarw.3')-2'-deoxycytidylyl-(5'.fwdarw.3')-2'-deoxyguanylyl-(5'.fwdarw.3')-2'-deoxyguanylyl-(5'.fwdarw.3')-2'-deoxyguanylyl-(5'.fwdarw.3')-2'-deoxyadenylyl-(5'.fwdarw.3')-2'-deoxyguanylyl-(5'.fwdarw.3')-thymidylyl-(5'.fwdarw.3')-2'-deoxyguanylyl-(5'.fwdarw.3')-2'-deoxycytidylyl-(5'.fwdarw.3')-2'-deoxyadenylyl-(5'.fwdarw.3')-2'-deoxy- (9CI) (CA INDEX NAME)

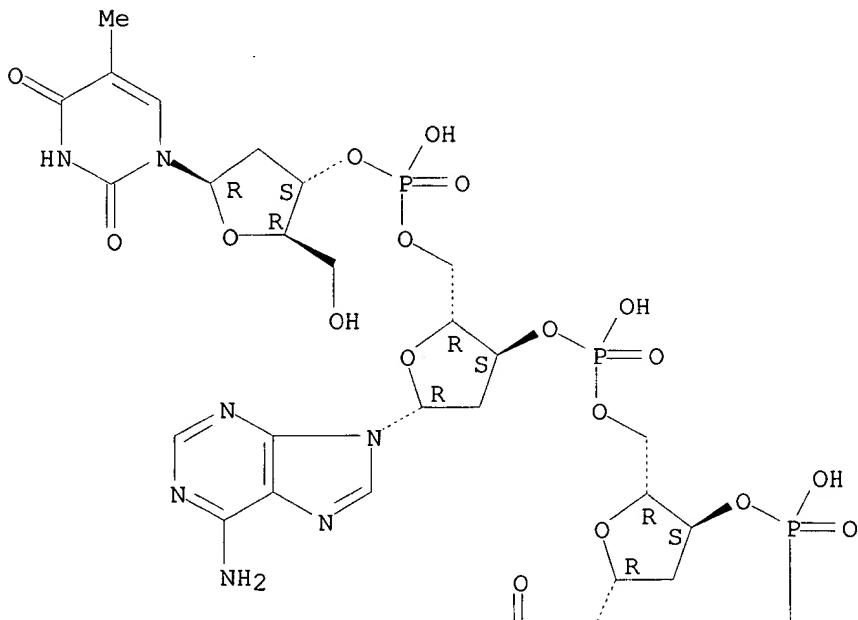
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 116364-61-5 HCPLUS

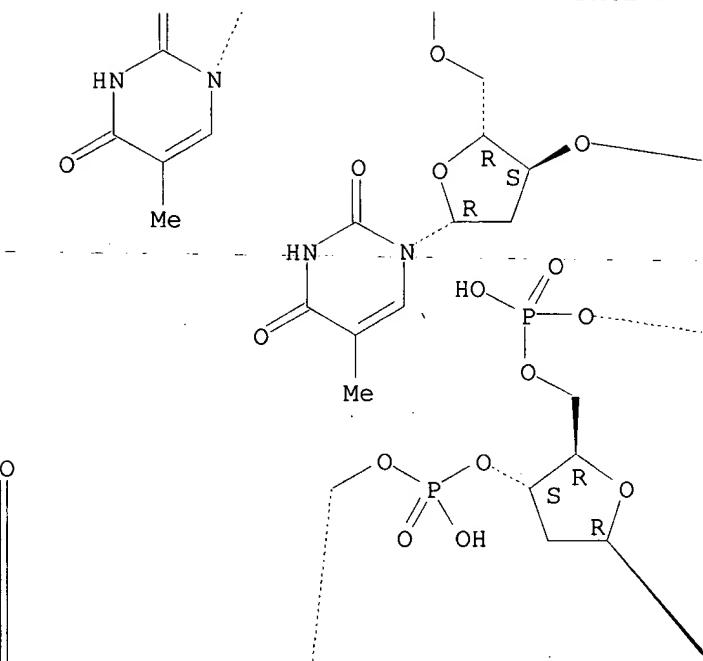
CN DNA, d(T-A-T-T-C-C-G-T-C-A-T) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

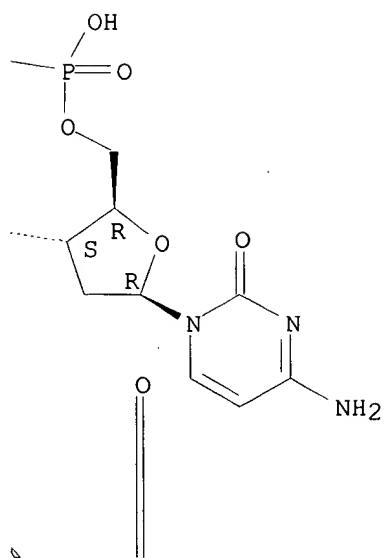
PAGE 1-A



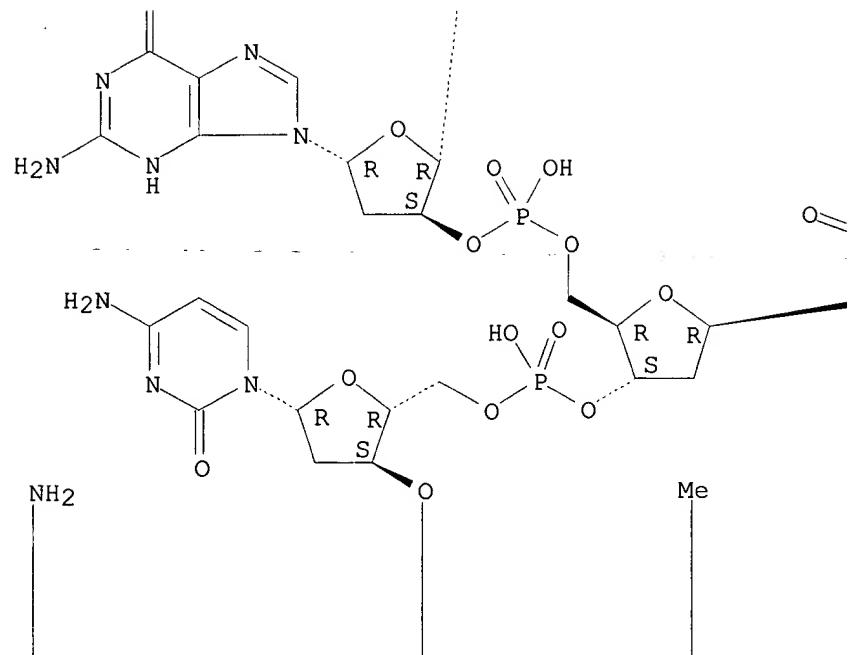
PAGE 2-A



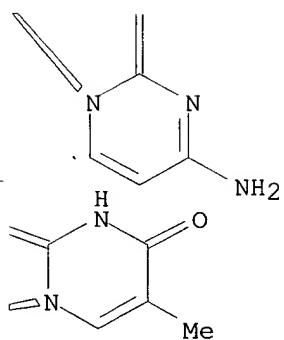
PAGE 2-B



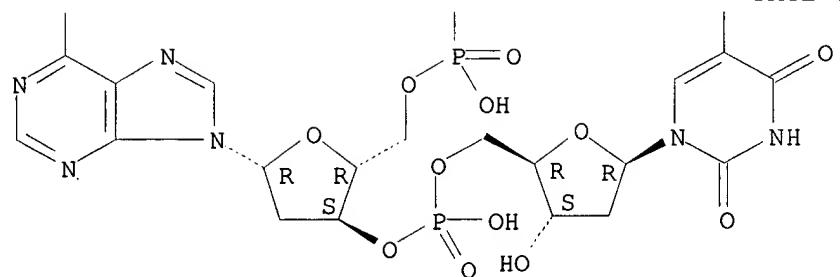
PAGE 3-A



PAGE 3-B



PAGE 4-A



RN 147178-75-4 HCAPLUS
CN Guanosine, 2'-deoxyadenylyl-(3'.fwdarw.5')-2'-deoxycytidylyl-(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-2'-deoxycytidylyl-(3'.fwdarw.5')-2'-deoxycytidylyl-(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-thymidylyl-(3'.fwdarw.5')-thymidylyl-(3'.fwdarw.5')-2'-deoxyguanylyl-(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-thymidylyl-(3'.fwdarw.5')-2'-deoxyguanylyl-(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-thymidylyl-(3'.fwdarw.5')-2'-deoxyguanylyl-(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-2'-deoxyadenylyl-(3'.fwdarw.5')-thymidylyl-(3'.fwdarw.5')-2'-deoxyguanylyl-(3'.fwdarw.5')-2'-deoxy-, double-stranded complementary (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 159845-57-5 HCAPLUS
CN DNA, d(G-C-C-C-G-A-A-G-A-C-C-C-G-G-C-A-C), double-stranded complementary (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 169025-57-4 HCAPLUS
CN 6: PN: WO9960167 SEQID: 5 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 181988-02-3 HCAPLUS
CN DNA, d(C-C-C-C-C-A-C-C-A-C-T-T-C-C-C-C-T-C-T-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 181988-09-0 HCAPLUS
CN DNA, d(G-C-C-C-A-A-G-C-T-G-G-C-A-T-C-C-C-G-T-C-A) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 186070-79-1 HCAPLUS
CN 86: PN: US6323185 SEQID: 86 claimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 186071-78-3 HCAPLUS
CN DNA, d(A-A-T-G-C-A-T-G-T-C-A-C-A-G-G-C-G-G-A), double-stranded complementary (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 186108-31-6 HCAPLUS
CN 3: PN: WO0004034 SEQID: 3 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 186123-93-3 HCAPLUS
CN 37: PN: WO0179249 SEQID: 63 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 186162-52-7 HCAPLUS
CN DNA, d(G-T-G-T-C-G-G-G-T-C-T-C-C-G-G-G-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 186162-55-0 HCAPLUS
CN Guanosine, 2'-deoxyadenylyl-(5'.fwdarw.3')-2'-deoxyadenylyl-(5'.fwdarw.3')-2'-deoxyadenylyl-(5'.fwdarw.3')-2'-deoxycytidylyl-(5'.fwdarw.3')-thymidylyl-(5'.fwdarw.3')-2'-deoxycytidylyl-(5'.fwdarw.3')-2'-deoxycytidylyl-(5'.fwdarw.3')-2'-deoxyguanylyl-(5'.fwdarw.3')-thymidylyl-(5'.fwdarw.3')-2'-deoxyguanylyl-(5'.fwdarw.3')-2'-deoxycytidylyl-(5'.fwdarw.3')-2'-deoxyguanylyl-(5'.fwdarw.3')-2'-deoxycytidylyl-(5'.fwdarw.3')-2'-deoxyadenylyl-(5'.fwdarw.3')-2'-deoxycytidylyl-(5'.fwdarw.3')-thymidylyl-(5'.fwdarw.3')-2'-deoxyadenylyl-(5'.fwdarw.3')

2'-deoxy- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 189356-60-3 HCPLUS

CN DNA, d(A-T-G-G-C-G-C-A-C-G-C-T-G-G-G-A-G-A), double-stranded complementary
(9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-07-7 HCPLUS

CN 61: PN: WO0179249 SEQID: 23 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-11-3 HCPLUS

CN 19: PN: WO0179249 SEQID: 45 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-12-4 HCPLUS

CN DNA, d(G-G-C-T-G-C-T-G-G-A-G-C-G-G-G-C-A-C-A-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-14-6 HCPLUS

CN 43: PN: WO0179249 SEQID: 5 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-15-7 HCPLUS

CN 75: PN: WO0179249 SEQID: 104 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-16-8 HCPLUS

CN 45: PN: WO0179249 SEQID: 7 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-17-9 HCPLUS

CN 46: PN: WO0179249 SEQID: 8 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-18-0 HCPLUS

CN 47: PN: WO0179249 SEQID: 9 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-19-1 HCPLUS

CN 48: PN: WO0179249 SEQID: 10 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-20-4 HCPLUS

CN 49: PN: WO0179249 SEQID: 11 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-21-5 HCPLUS

CN 51: PN: WO0179249 SEQID: 13 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-22-6 HCPLUS

CN 9: PN: WO0179249 SEQID: 35 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-23-7 HCPLUS

CN 12: PN: WO0179249 SEQID: 38 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-24-8 HCPLUS
CN 13: PN: WO0179249 SEQID: 39 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-25-9 HCPLUS
CN 14: PN: WO0179249 SEQID: 40 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-26-0 HCPLUS
CN 15: PN: WO0179249 SEQID: 41 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-27-1 HCPLUS
CN DNA, d(C-A-C-G-T-T-G-A-G-G-G-C-A-T) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 195184-28-2 HCPLUS
CN 20: PN: WO0179249 SEQID: 46 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 197831-18-8 HCPLUS
CN PN: WO9950409 TABLE: 1 unclaimed sequence (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 246223-25-6 HCPLUS
CN DNA, d(G-C-G-G-C-G-G-A-A-A-G-C-C-A-T-C-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 257601-47-1 HCPLUS
CN 1: PN: EP978561 SEQID: 1 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-36-5 HCPLUS
CN 18: PN: WO0108707 SEQID: 18 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-37-6 HCPLUS
CN 5: PN: WO0108707 SEQID: 23 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-38-7 HCPLUS
CN DNA, d(G-G-A-G-G-C-C-C-G-A-C-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-39-8 HCPLUS
CN 37: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-40-1 HCPLUS
CN 48: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-41-2 HCPLUS
CN 49: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-42-3 HCPLUS
CN 50: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

MAUPIN 09/835,371

RN 325605-43-4 HCPLUS
CN 54: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-44-5 HCPLUS
CN 55: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-45-6 HCPLUS
CN 56: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-46-7 HCPLUS
CN 57: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-47-8 HCPLUS
CN 58: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-48-9 HCPLUS
CN 59: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-49-0 HCPLUS
CN 91: PN: US20010021772 TABLE: 2 unclaimed DNA (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-50-3 HCPLUS
CN DNA, d(G-C-A-G-C-C-C-C-G-C-A) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-51-4 HCPLUS
CN DNA, d(G-C-A-G-C-A-G-C-C-C-C) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 325605-52-5 HCPLUS
CN DNA, d(G-A-T-G-G-A-G-G-G-C-G-G-C-A-T-G-G-C-G-G-G) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***